SECTION III.—FORECASTS.

STORMS AND WARNINGS FOR NOVEMBER.

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A count of the lows that have occurred during November in the 10 years 1900–1909, classed according to their point of origin, gives the following results: Alberta, 38; North Pacific, 22; South Pacific, 8; Northern Rocky Mountain region, 7; Middle Rocky Mountain region, 14; Texas, 10; East Gulf, 4; South Atlantic, 3; Central Valley, 13; total, 119, or an average of 12 per year, of which the great majority belong to the Alberta and North Pacific groups.

The movement of highs and lows during November, 1914, was typical of this month in practically all respects. Twelve primary and two secondary lows were charted, classed as follows: Alberta, 8; North Pacific, 2; South Pacific, South Atlantic, and Texas, 1 each. All of the lows charted reached the Atlantic except South Pacific No. V, and Alberta No. XII.

The movement of the Alberta and North Pacific lows was along the northern boundary, passing generally north of the Lake region and thence down the St. Lawrence Valley. The paths of six Alberta lows on Chart III are combined in the one path shown by the heavy line along the northern border.

The weather of the month was dominated almost wholly by the Alberta lows, and, as a consequence, clear skies, much bright sunshine, relatively high day temperatures, and lack of precipitation were the characteristic features. South Pacific low No. V and Texas low No. XI gave an abundance of rain along the Gulf coast. The South Atlantic States also had normal rains for the month.

One of the most interesting features of the month was the decay of Alberta low No. VIII, in the upper Lake region and the synchronous development of a low over the Atlantic, off Hatteras, on the morning of the 19th (see track No. IX), which gave New England its first "northeaster" of the season. It may be remembered that somewhat similar development gave the Lake region its destructive November storm just about a year ago. The rapid fall in pressure over northern Alabama, northern Georgia, and eastern Tennessee, on the afternoon of the 19th, caused a secondary depression to form in the vicinity of Asheville, N. C., at 8 p. m. of the 19th. This secondary depression, in connection with high area No. VI, caused a rapid and record-breaking (for November) fall in temperature that was pretty general over the Southeastern States, except Florida. The last-named State was visited by killing frost as far south as Tampa on the morning of the 21st.

RAPID MOVEMENT OF LOW CENTERS.

As will be seen by reference to Chart No. III of this REVIEW, there were several cases during the month when the low center was translated in an easterly direction at the very high speed of 60 to 80 miles per hour. (See No. IV, p. m. map of the 11th, to a. m. map of 12th; No. XI, a. m. to p. m. of the 26th.) In both of these cases the pressure gradient to the eastward of the low center was very slight and the trend of the isobars was favorable to a rapid eastward movement, viz, parallel with the course of the low. The 12-hour pressure fall, concurrent with the initial position of the low center, was fairly well marked and extended in each case a little beyond the positions of the lows at the end of the ensuing 12-hour period.

It is not to be inferred that the system of whirling winds of which the low is composed was translated bodily across country at the speeds mentioned. We prefer to believe that the mode of progression of a low consists in a steady and continuous fall in pressure far in its front and a somewhat sharper rise in pressure in the rear; that the advance is somewhat analogous to the progression of a wave in water.

SLOW-MOVING LOWS IN NOVEMBER.

The South Pacific low charted as No. V had several periods of stagnation in its course, viz, at its point of origin near the mouth of the Rio Grande River, and in the Gulf of Mexico, off the mouth of the Mississippi, on the 14th. The indicated track, afternoon of 14th to morning of 15th, is uncertain. A later West Gulf storm, No. XI, stagnated near New Orleans for about 48 hours and finally became extinct.

It seems probable that the further movement of this storm, as well as that of No. XIV, an Alberta storm which expired on the same date, over Saskatchewan, was prohibited by high area No. VIII, which on that date was centered off the New England coast.

The history of this area of high pressure, No. VIII, shows that in the 24 hours ending with 8 p. m. of November 28 sea-level pressure within the closed isobar at its center increased from 30.40 to 30.70 inches and that, coincident with the increase in pressure, there was a reduction in the speed of its eastward movement from about 40 miles per hour to less than 10 miles per hour. It caused easterly winds to prevail over Atlantic coast districts, and these latter in turn produced a general cloud blanket that extended as far inland as the Mississippi Valley and was by far the most extensive area of cloud that prevailed during the month. The total cessation of the easterly drift of the lower layers of the atmosphere, apparently produced by the high in question, was one of the interesting features of the month.